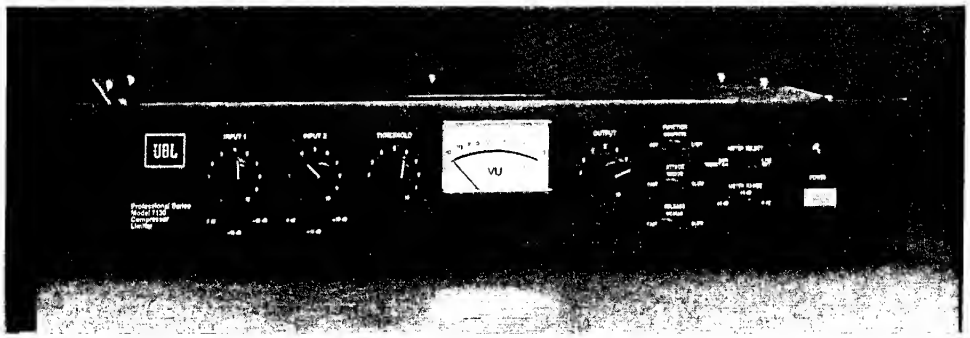
JBL 7130 INSTALLATION AND SERVICE MANUAL



Architectural Specifications

The 7130 compressor/limiter shall have an output capacity of +18 dBm from 20 Hz-20 kHz, ±1 dB and total harmonic distortion shall be less than 0.25% to +18 dBm, 20 Hz-20 kHz in either the compression or limiting mode with up to 30 dB of gain reduction.

The unit shall accept high impedance, unbalanced microphones. The microphone preamplifier circuitry shall employ field effect transistors for low noise. The compressor shall be capable of any combination of line-line, mic-mic, or line-mic operation. Balanced inputs shall be possible by using optional input transformers. Outputs shall be transformer isolated or direct for connection to a balanced or unbalanced 600 Ω line.

The compressor/limiter shall be equipped with a selector switch to place the unit in one of three modes of operation: **OUT, COMPRESS,** or **LIMIT.** The normal threshold of compression shall be 0 dBm output. An input level control shall vary the gain when the selector switch is in the **OUT** mode. It shall also determine the relative threshold when the unit is in the **COMPRESS** or **LIMIT** mode. Two switches shall be provided for the selection of three release times and three attack times.

The unit shall be equipped with a meter, governed by a function selector switch, which indicates amount of compression or output level in dB. When indicating output level, three ranges shall be selectable so that 0 VU on the meter corresponds to an output level of 0 dBm, +4 dBm, or +8 dBm, unbalanced, and +2 dBm, +6 dBm, or +10 dBm balanced output. The unit shall operate on 120/240 V AC, 50/60 Hz.

The unit shall be JBL Model 7130.

JBL continually engages in research related to product improvement. New materials, production methods and design refinements are introduced into existing products without notice as to routine expression of the philosophy. For this reason, any current JBL product may differ in some respects from its published description, but will always equal or exceed the original design specifications unless otherwise stated.

PRODUCT SPECIFICATIONS

Maximum Gain	
Direct Input (Unbalanced)[1]	
Line	30 dB, high Z
Microphone	62 dB, high Z
Balanced Input[1]	
Line with 5195 Transformer	84 dB, low Z
Microphone with 5901 Transformer	30 dB, high Z
Output Characteristics	
Output Impedance	
Direct	40-80 Ω, unbalanced (20 Hz–20 kHz)
Balanced	400–600 Ω (20–20 kHz)
Maximum Output Level	+18 dBm
Input Characteristics	
Input Impedance	
Direct Input (Unbalanced)	
Line	15 kΩ
Microphone	51 kΩ
Balanced Input	
Line with 5195 Transformer	15 kΩ
Microphone with 5901 Transformer	800 Ω
Normal Input Level	
Direct Input (Unbalanced)[1]	
Line	170 mV RMS minimum (–13.5 dBm)
Microphone	
Input Pad 0	5.4 mV RMS minimum (–41.5 dBm)
Input Pad –15	30 mV RMS minimum (–28.1 dBm)
Input Pad –30	163 mV RMS minimum (–13.1 dBm)
Balanced Input[1]	
Line with 5195 Transformer	190 mV RMS minimum (–12.5 dBm)
Microphone[1]	
Input Pad 0	0.38 mV RMS minimum (–66.2 dBm)
Input Pad –15	2.15 mV RMS minimum (–51.2 dBm)
Input Pad –30	11.8 mV RMS minimum (–36.2 dBm)
Input Overload[2]	
Direct Input (Unbalanced)	
Line	11.5 V RMS (+23.5 dBm)
Microphone	
Input Pad 0	120 mV RMS (–16.2 dBm)
Input Pad –15	650 mV RMS (–1.2 dBm)
Input Pad –30	3.65 V RMS (+13.5 dBm)
Balanced Input	
Line with 5195 Transformer	3.32 V (+13.5 dBm)
Microphone	
Input Pad 0	9.2 mV RMS (–39.5 dBm)
Input Pad –15	53 mV RMS (–24.5 dBm)
Input Pad –30	270 mV RMS (–9.5 dBm)
Frequency Response	
Direct Output[1]	
Direct Input	
Line	+0, –1 dB, 10 Hz–50 kHz
Microphone	+0.25, –1 dB, 10 Hz–47 kHz
Balanced Input[1]	
Line with 5195 Transformer	+1, –2 dB, 30 Hz–20 kHz
Microphone with 5901 Transformer	+1, –2 dB, 30 Hz–20 kHz
Balanced Output	
Direct Input[1]	
Line	+0, –1 dB, 10 Hz–30 kHz
Microphone	+0, –1 dB, 10 Hz–28 kHz
Balanced Input[1]	
Line with 5195 Transformer	+1, –2 dB, 10 Hz–20 kHz
Microphone with 5901 Transformer	+1, –2 dB, 30 Hz–20 kHz
Total Harmonic Distortion[3]	0.2%, 20 Hz–20 kHz @ rated output
Intermodulation Distortion[1,4] (SMPTE)	
Direct Out	
Direct Input (unbalanced)	
Line	0.005%
Microphone	0.03%
Balanced Input	
Line	0.007%
Microphone	0.06%
Balanced Output	
Direct Input (unbalanced)	
Line	0.0065%
Microphone	0.06%
Balanced Input	
Line	0.0085%
Microphone	0.06%
Equivalent Input Noise[3,5]	
Direct Input[1]	
Line	–100 dBm
Microphone	–126 dBm

Balanced Input[1]	
Line with 5195 Transformer	−99 dBm
Microphone with 5901 Transformer	133.5 dBm
Compress/Limiter Functions	
Attack Time	
Fast	400 μs
Medium	3.0 ms
Slow	140 ms
Release Time	
Fast	30 dB/s
Medium	8 dB/s
Slow	4 dB/s
Controls	
Input 1 & 2	Audio taper, rotary
Output	Audio taper, rotary
Threshold	Audio taper, rotary
Attack	3-position slide switch Fast Medium Slow
Function	3-position slide switch Out Compress Limit
Meter Range	3-position slide switch 0 dB +4 dB +8 dB
Meter Select	2-position slide switch gain reduction Line out
Microphone Attenuator	3-position slide switch 0 dB −15 dB −30 dB
Release	3—position slide switch Fast Medium Slow
Mic 1/Line & Mic 2/Line	Push-lock/push-release
Indicators	
Power On	Green LED
Meter	Illuminated
Power Requirements	
Line Voltage	120/240 V AC, 50/60 Hz
Wattage	15 watts maximum
Connectors	
Line Input(2)	Screw terminal board
Microphone Inputs(2)	Female XL-type socket, positive locking
Output	Screw terminal board
Accessory Transformer	9-pin female socket
Dimensions	
Front Panel	483 mm x 88 mm 19 in x 3 15/32 in
Depth of Controls	19 mm 3/4 in
Depth Behind Panel	178 mm 7 in
Weight	
Net	4 kg 9 lb
Shipping	5.4 kg 12 lb
Mounting	2 EIA standard rack spaces
Panel Finish	Semi-gloss baked enamel, dark gray; white nomenclature
Accessories	
	Model 5195 matching/briding transformer
	Model 5901 microphone transformer

NOTES:
1. 600 Ω source.
2. Measured at 0.5% THD.
3. ATTACK and RELEASE times set to slow.
4. At +18 dBm.
5. Requires a 20 Hz—20 kHz equivalent bandwidth filter.

Installation

The 7130 is suitable either for rack mounting in two EIA rack spaces without additional bracing or ventilation, or for counter-top placement. A full set of mounting hardware is packaged with each unit. All external connections are made on the rear panel, Figure 2.

Operating Temperature

The maximum allowable ambient temperature for the 7130 is 60°C (140°F).

Operating Controls

All operating switches, meter, threshold and level controls, except for **MIC/LINE** input selector switches, are located on the front panel, Figure 1.

Input Connections

Input connections to the 7130 may be either direct coupled or transformer isolated at the XL-type sockets or screw terminal boards, Figure 2.

Direct coupling is accomplished by connecting either the center conductor of a shielded cable to **DIRECT** (line input) and the shield to **GND**, or the center conductor of a shielded cable to pin #2 (XL-type connector) and the shield to pin #1.

For transformer isolated inputs, a 5901 universal microphone transformer (for microphone inputs) or a 5195 matching/bridging transformer (for line inputs), Figure 3 and 5, may be used. Transformer isolation is accomplished by connecting the clear conductor of a two conductor shielded cable to **HI** (line input), the black conductor to the **LO** and the shield to **GND**, or the clear conductor of a two conductor shielded cable to pin #3 (XL-type conductor), the black to pin #2 and the shield to pin #1.

Output Connections

Output connections to the 7130 may be either direct coupled or transformer isolated at the screw terminal board, Figure 2.

Direct coupling is accomplished by connecting the center conductor of a shielded cable to **DIRECT** and the shield to **GND**.

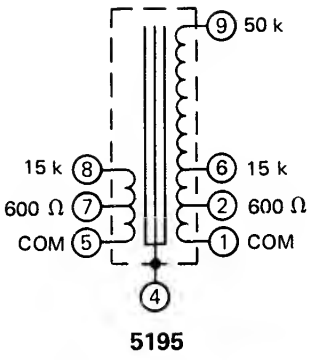
Transformer isolated output is accomplished by connecting the clear conductor of a two conductor shielded cable to the **HI**, the black conductor to the **LO** and the shield to **GND**.

Installation of Microphone or Line Transformer

To install the optional transformers, Figure 3 or 5, (Model 5195 or 5901):

1. Remove the two copper jumpers between terminals 8 & 9 and 4 & 5.

   NOTE: Remove only the jumpers from the 9-pin socket in which the optional transformer is to be used.
2. Install the optional transformer per Figure 4.



5195

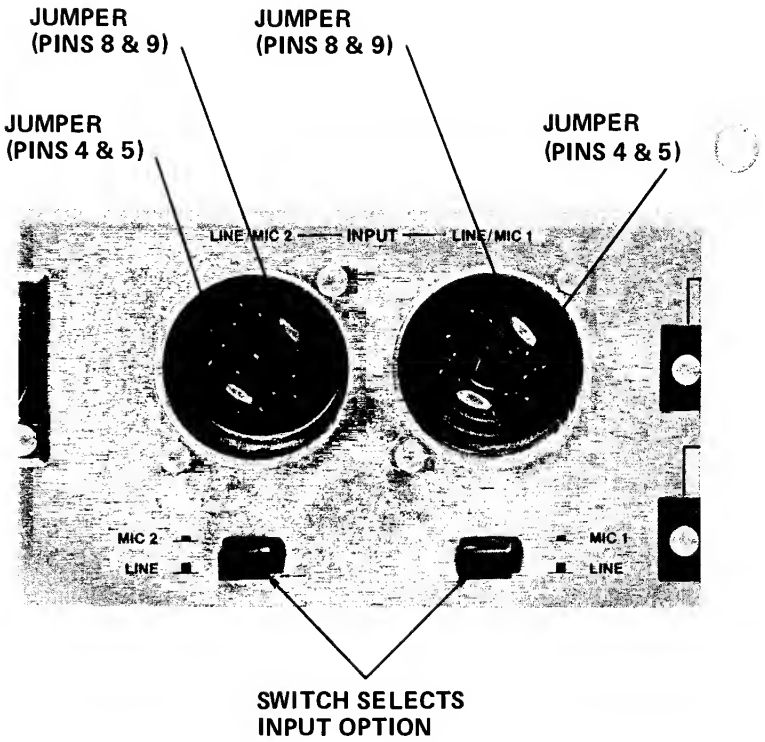
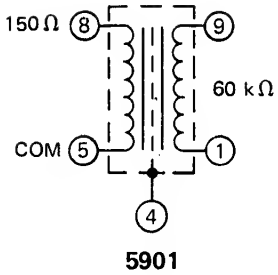


FIGURE 3



5901

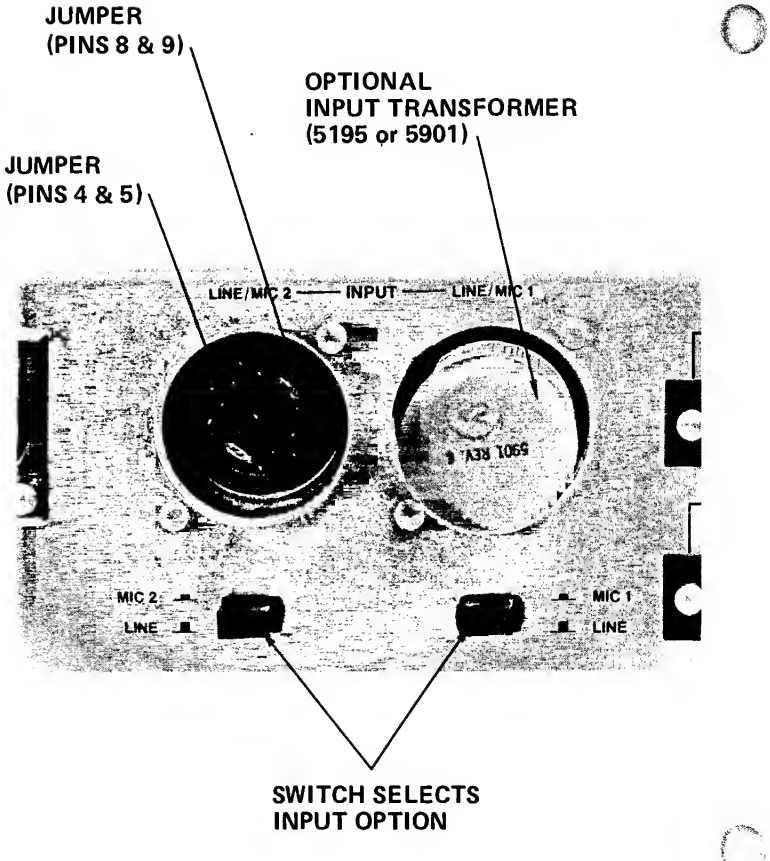


FIGURE 4

JUMPER INSTALLATION

1. Remove the optional transformer from the appropriate 9-pin socket.
2. Install two #12 AWG copper jumpers per Figure 6.

Input 1 Controls either line level or microphone input level depending on position of **MIC 1/LINE** push-lock/push-release switch.

NOTE: When either the JBL 5901 or 5195 transformer is used, the **INPUT 1** control cannot be used to prevent transformer saturation if excessive input signal levels occur. See **SPECIFICATIONS** (Input Characteristics) for maximum input.

Output Provides simulataneous attenuation of all input channels using a continuously variable potentiometer marked from 0 to 10.

Attack
Medium
Fast **Slow**

Selects one of three fixed attack times:

Fast ..... 400 μs
Medium ..... 3.0 ms
Slow 140ms

Input 2 Controls either line level or microphone input level depending on position of **MIC 1/LINE** push-lock/push-release switch.

NOTE: When either the JBL 5901 or 5195 transformer is used, the **INPUT 2** control cannot be used to prevent transformer saturation if excessive input signal levels occur. See **SPECIFICATIONS** (Input Characteristics) for maximum input.

Function Compress
Out **Limit**

Selects any one of three optional modes of 7130

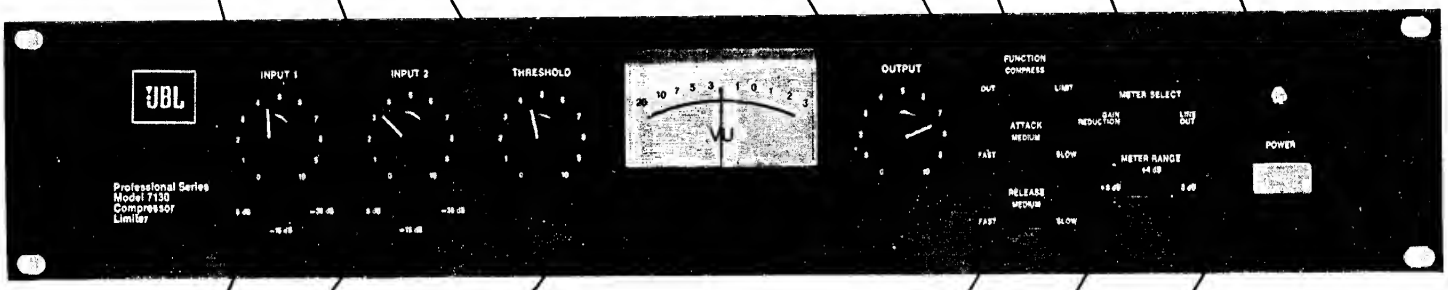
Meter Select
Gain Reduction
Line Out

Selects VU meter function.

Threshold Adjustable control which sets the level above which compression or limiting occurs.

Power Switch
Push-Lock/Push-Release

Applies power to 7130.



LED Power On Indicator Light Indicates power applied to unit.

VU Meter Displays either output or gain reduction in volume units (VU). Meter is illuminated when secondary voltage is applied.

Meter Range
+4 dB
+8 dB **0 dB**

Selects full-scale range of meter. Calibrated as follows:

METER RANGE	METER DISPLAY	OUTPUT REF. Ω	OUTPUT VOLTAGE
0 dBm	0	0 dBm	0.775V
+4 dBm	0	+4 dBm	1.129 V
+8 dBm	0	+8 dBm	1.948 V

MIC Attenuator Pad Switches
0 dB **-30 dB**
-15 dB

Reduces gain 15 dB or 30 dB on corresponding microphone input channels to allow the use of high-impedance microphones without introducing distortion.

NOTE: The mic attenuator pad changes the feedback in the input stage; it can not be used to prevent input saturation if excessive input signal levels occur, but does not effect possible saturation of optional 5901 universal input transformer.

Release
Medium
Fast **Slow**

Selects one of three fixed release times:

Fast ..... 400 μs
Medium ..... 3.0 ms
Slow 140ms

FIGURE 7

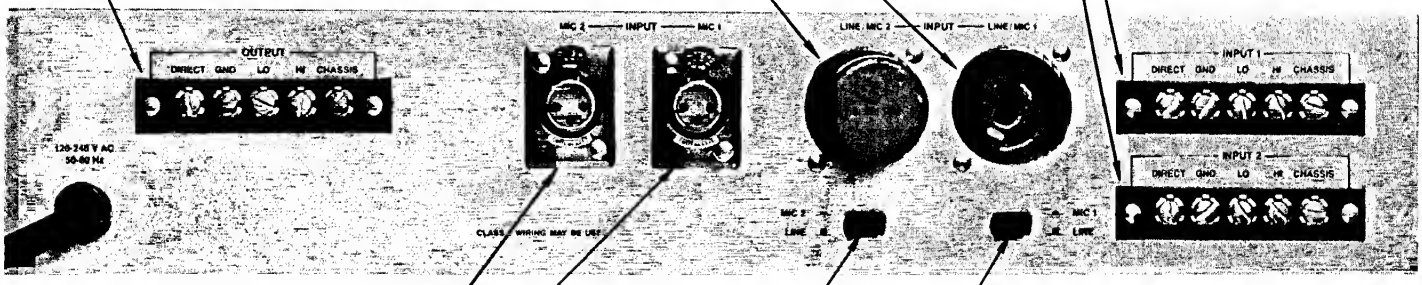
Input 1 & Input 2 Balanced input impedance of 15 kΩ up to a level of +21 dB without optional 5195 matching/bridging transformer.

Balanced input impedance of 600 Ω using a 620 Ω resistor connected to terminals **HI** and **LO**, up to a level of +21 dBm with optional 5195 transformer.

Unbalanced 15 k Ω input impedance or 600 Ω input impedance using a 620 Ω resistor connected to terminals **GND** and **DIRECT**.

Line/MIC 2 – Input – Line/MIC 1 9-pin socket requiring either two copper jumpers between pins 4 & 5 and 8 & 9, or a JBL 5901 universal microphone input transformer or 5195 matching/bridging transformer allowing for either a balanced or unbalanced input.

Output Unbalanced 600 Ω direct or 600 Ω balanced up to an output level of +18 dBm.



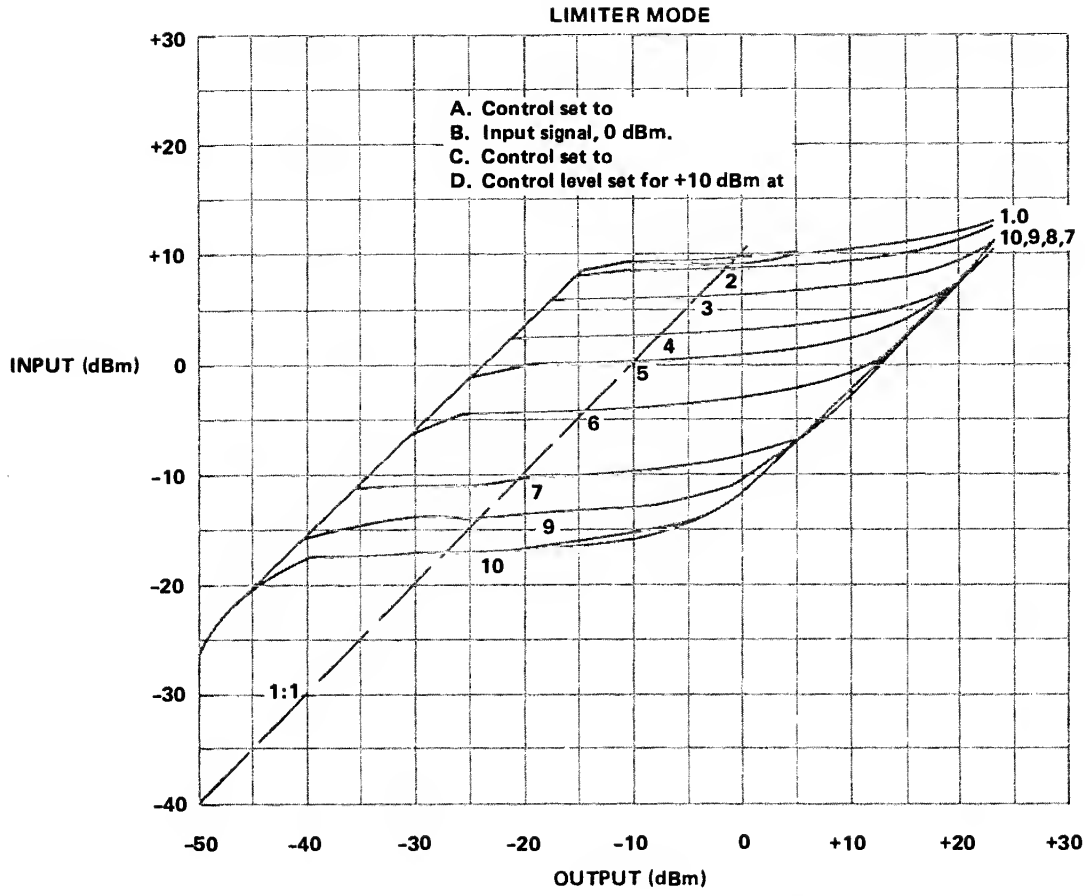
MIC 1 Line Push-lock/push-release switch allowing input to be used for either microphone or line.

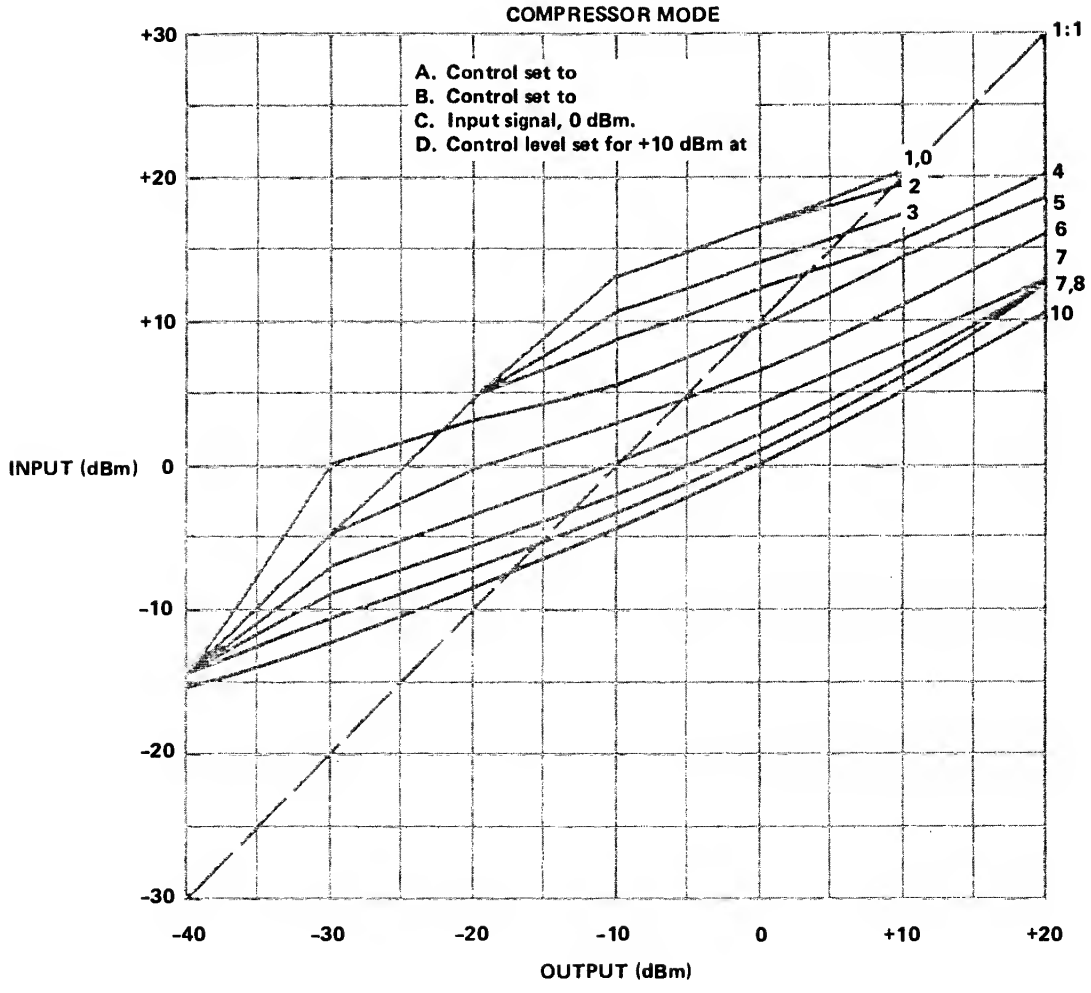
MIC 2 Line Push-lock/push-release switch allowing input to be used for either microphone or line

MIC 2 – Input – MIC 1 Balanced input impedance of 600 Ω using a 620 Ω resistor connected to terminals **HI** and **LO**, up to a level of +21 dBm with optional 5195 transformer.

NOTE: When the JBL 5901 universal microphone input transformer is used, the microphone pad and control cannot be used to prevent transformer saturation if excessive input signal levels occur. See **SPECIFICATIONS** (Input Overload) for maximum input.

FIGURE 2


LIMITER MODE
A. Control set to
B. Input signal, 0 dBm.
C. Control set to
D. Control level set for +10 dBm at
1.0
10,9,8,7
2
3
4
5
6
7
9
10
1:1
+30
+20
+10
0
-10
-20
-30
-40
INPUT (dBm)
-50
-40
-30
-20
-10
0
+10
+20
+30
OUTPUT (dBm)


COMPRESSOR MODE
A. Control set to
B. Control set to
C. Input signal, 0 dBm.
D. Control level set for +10 dBm at
1:1
1,0
2
3
4
5
6
7
7,8
10
+30
+20
+10
0
-10
-20
-30
INPUT (dBm)
-40
-30
-20
-10
0
+10
+20
OUTPUT (dBm)

WARNING
THIS SECTION OF THE MANUAL CONTAINS SERVICE INSTRUCTIONS FOR USE BY QUALIFIED SERVICE PERSONNEL ONLY.

Service and Maintenance Instructions

The following procedures are designed to assist in the isolation of malfunctions. The operations described should be undertaken only after an investigation of all external connections and adjustments has indicated, beyond reasonable doubt, that the problem is actually internal.

> **WARNING:** Disconnect the 7130 from the power source before performing service operations or replacing components.

Voltage Conversion

The 7130 can be operated from either 120 V AC or 240 V AC, 50/60 Hz source. The line voltage selector, a Molex commoning connector, Figure 7, changes the primary connections of the power transformer. Use the following procedure to change the voltage range:

FIGURE 7

1. Remove the four screws which hold the top cover to the chassis.
2. To convert from 120 V AC to 240 V AC, remove only the following wires, shown in Figure 8 and Table 2:
3. Remove the frosted spacers from the commoning connector, spaces 7 and 8.
4. Insert the two colored coded wires removed from step 2, Table 2 and insert them per Figure 9, Table 3:

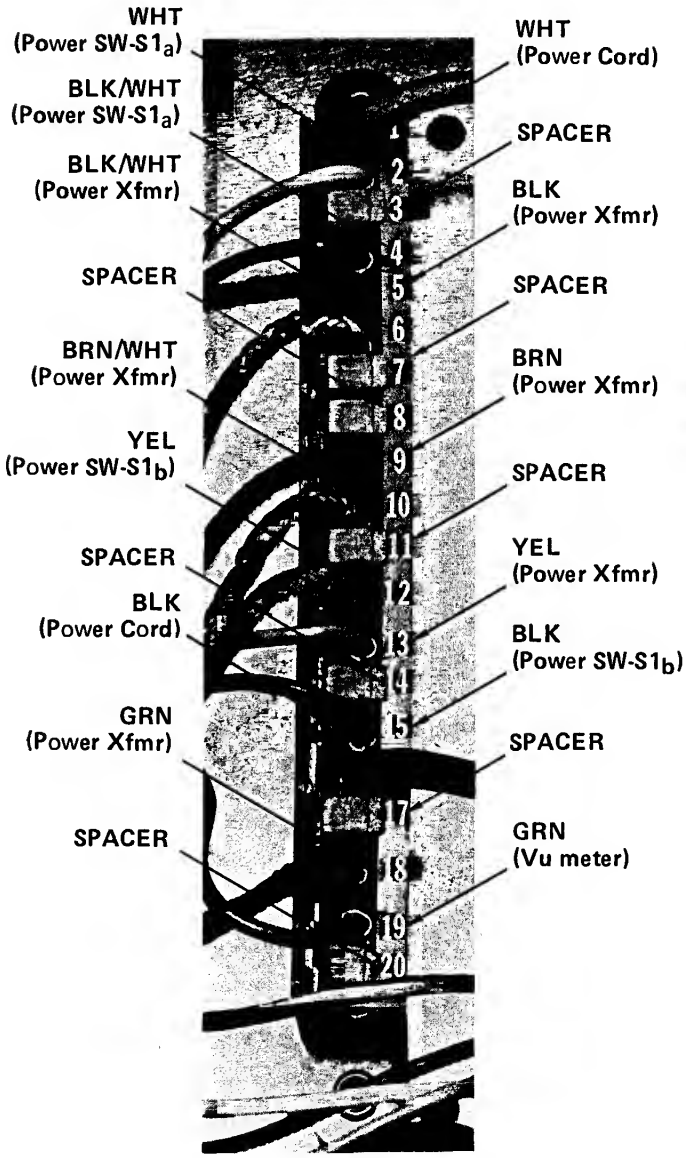


FIGURE 8

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TABLE 2 (120 V AC commoning wire code)

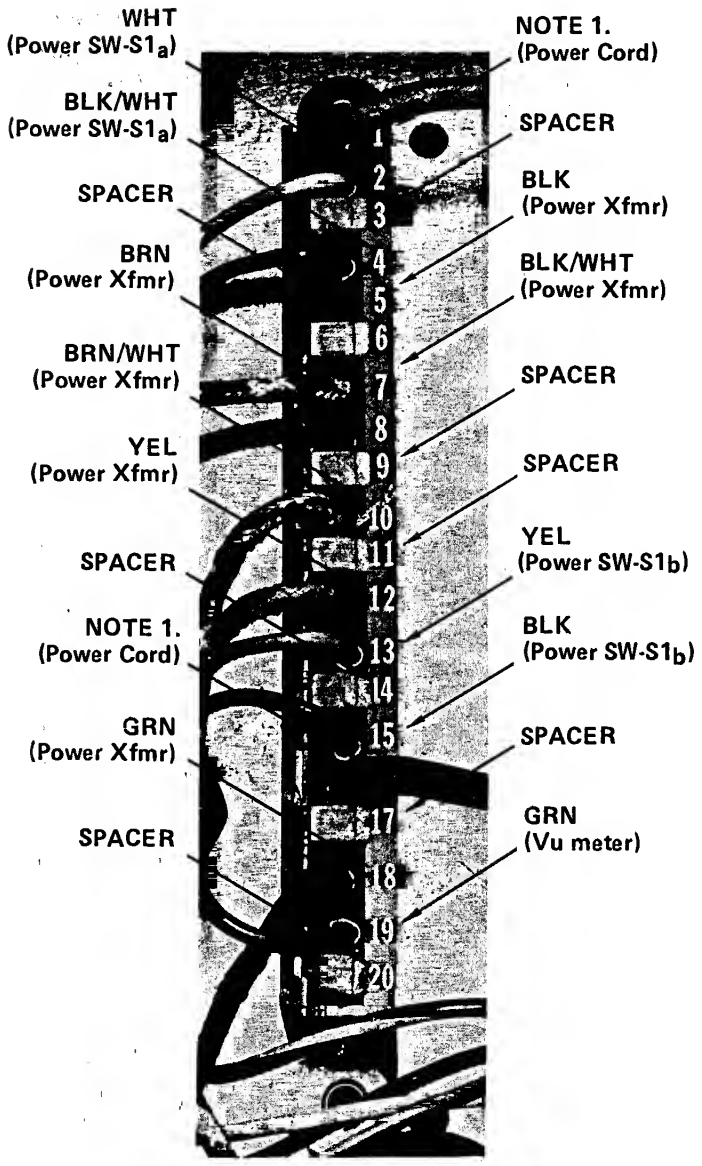
Comming Connector Terminal	Wire Color	Wire Origin	Spacer Required
1	Wht	Power Cord	
2	Wht	Power Switch	
3			Yes
4	Blk/Wht	Power Switch	
5	Blk	Power Transformer	
> 6	Blk/Wht	Power Transformer	<
7			Yes
8			Yes
> 9	Brn	Power Transformer	<
10	Brn/Wht	Power Transformer	
11			Yes
12	Yel	Power Switch	
13	Yel	Power Transformer	
14			Yes
15	Blk	Power Switch	
16	Blk	Power Cord	
17			Yes
18	Grn	Power Transformer	
19	Grn	Meter/LED Assy.	
20			Yes

NOTE: > & < denotes commoning connector terminal changes required to change line voltage from 120 V AC to 240 V AC. See Table 3 and manual instructions for correct procedures.

TABLE 3 (240 V AC commoning wire code)

Comming Connector Terminal	Wire Color	Wire Origin	Spacer Required
1	Note 1.	Power Cord	
2	Wht	Power Switch	
3			Yes
4	Blk/Wht	Power Switch	
5	Blk	Power Transformer	
6			Yes
> 7	Blk/Wht	Power Transformer	<
> 8	Brn	Power Transformer	<
9			Yes
10	Brn/Wht	Power Transformer	
11			Yes
12	Yel	Power Transformer	
13	Yel	Power Switch	
14			Yes
15	Blk	Power Switch	
16	Note 1.	Power Cord	
17			Yes
18	Grn	Power Transformer	
19	Grn	Meter/LED Assy.	
20			Yes

NOTES: 1. Based on local regulations.
2. > & < denotes commoning connector terminal changes required to change line voltage from 240 V AC to 120 V AC. See Table 2 and manual instructions for correct procedures.



NOTE 1. Based on local regulations.

FIGURE 9

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5. Insert the frosted spacers into spaces 6 and 9.
6. Change the line cord and/or attachment plug to match the supply source receptacle, or use a 120 V to 240 V AC adapter (not provided). The adapter as well as the power supply cord/or attachment plug used for 240 V AC mode in the U.S., Canada and Japan shall be both UL listed and CSA certified for use with said power source receptacle and wired per Table 3. For use in other countries, adapter, line cord and/or attachment plug selection shall be based on local regulations.
7. In countries requiring line cords having wire codes different from those noted in Step #6, the following suggestions apply.
   A. Remove the existing power cord from the chassis, and be careful not to damage the Molex crimp terminal. If a new Molex crimp terminal is not available, follow steps B through H. If a Molex 1457-1 is available, follow steps I through M.
   B. Cut the existing single wire of the power cord having the Molex crimp terminal 38 mm (1.5 in). Strip the cut end of the wire 5 mm (3/16 in) and tin.
   C. Obtain an Electrovert single strip, 6E/1 DS or equivalent.
   D. Using the original power cord as a wire guide, strip the outer covering from the new power cord and cut each wire to the appropriate length, per the local wiring code.
   E. Strip 5 mm (3/16 in) from the longest wire and tin.
   F. Insert the wires from steps B and E into the Electrovert terminal strip and tighten as required.
   G. Solder the appropriate colored ground wire to solder lug E1.
   H. Insert the crimped Molex terminals into the Molex commoning connector, spaces #1 and #16. Verify that the remaining transformer crimp terminals and spacers have been changed for 240 V AC use, per Table 3.
   I. Using the existing power cable as a wire length guide, strip the outer covering of the new power cord and cut each wire to length per the local wiring code.
   J. Strip 3 mm (1/8 in) from the longest wire.
   K. Insert the wire into the Molex terminal per Figure 7, and crimp, using a Molex tool model HTR 1031C or equivalent.
   L. Solder the appropriate colored ground wire to solder lug E1.
   M. Insert the crimped Molex terminals into the Molex commoning connector, spaces #1 and #16. Verify that the remaining transformer crimp terminals and spacers have been changed for 240 V AC use, per Table 3.

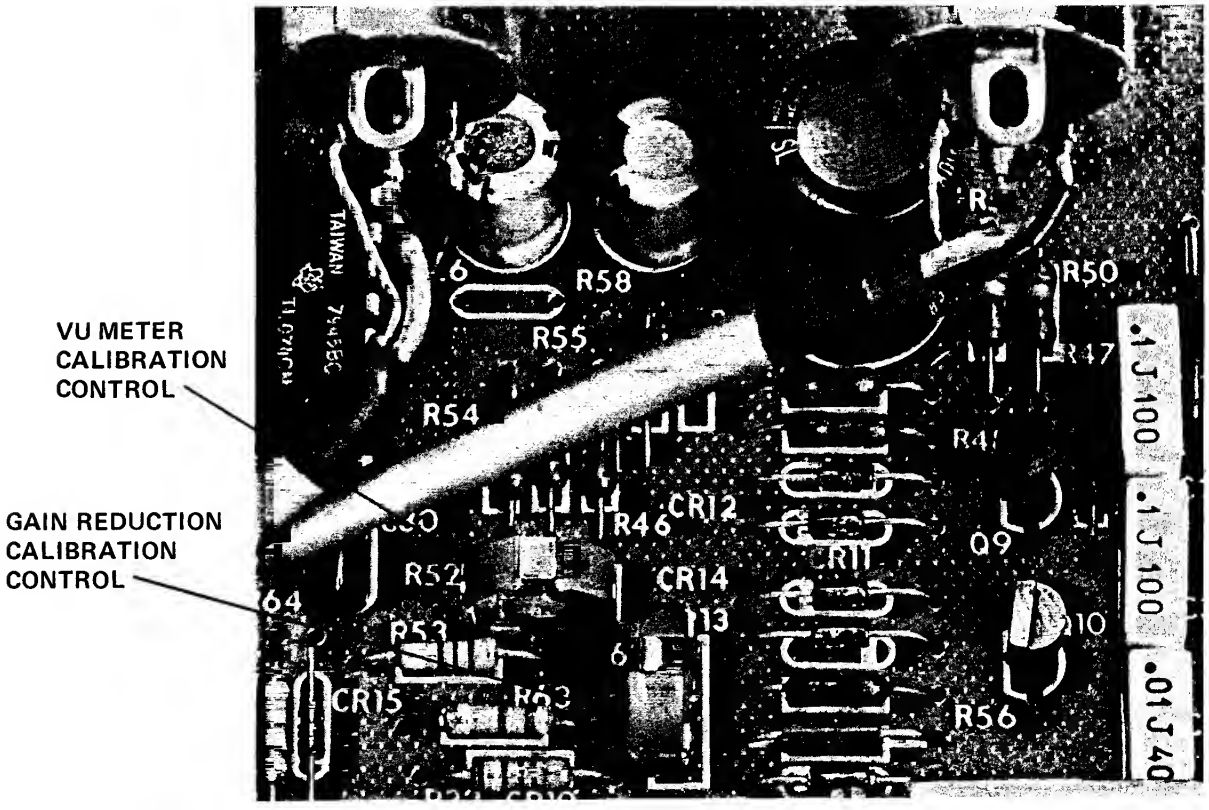

FIGURE 10

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VU Meter Calibration Procedure

1. Remove the top cover.
2. Connect an AC voltmeter to the OUTPUT screw terminal board **DIRECT** and **GND** and terminate with a 600 Ω load.
3. Connect a test oscillators's 600 Ω output, terminated by a 600 Ω load, to **LINE** 1 screw terminal board **DIRECT** and **GND**.
4. Set the 7130 controls as follows:

Input 1	Max
Output	Max
Function	Out
Meter Range	dB
Meter Select	Line out

5. Set the test oscillator frequency to 1 kHz at an amplitude of –31 dBm.
6. Adjust the meter calibration control, R52, Figure 10, for 0 VU indication, 0 dBm.

Gain Reduction, 0 VU Meter Calibration

1. Remove the top cover.
2. Set the 7130 controls as follows:

Input 1 & 2	Minimum
Threshold	Minimum
Output	Minimum
Meter Select	Gain reduction

3. Adjust R62, Figure 10, for 0 VU.

Compress/Limit Adjustment

1. Remove the top cover.
2. Connect the AC voltmeter to the **OUTPUT** screw terminal board, **DIRECT** and **GND** and terminate with a 600 Ω load.
3. Connect the test oscillator's 600 output, terminated by 600 Ω load, to **LINE** 1 screw terminal board **DIRECT** and **GND**.
4. Set the 7130 controls as follows:

Input 1	Max
Threshold	Max
Output	Max
Attack	Fast
Release	Fast
Function	Compress

5. Set the test oscillator frequency to 1 kHz at an amplitude of +10 dBm.
6. Adjust R3, Figure 11, for 2.7 V AC.
7. Reset the **THRESHOLD** control to minimum.
8. Adjust the oscillator output level until the output level of the 7130 is +20 dBm. Input level to the 7130 must measure –7 dBm, ±3 dBm.
9. Set the Function switch to **LIMIT** and the **THRESHOLD** control to maximum.
10. Adjust the oscillator for 0 dBm output of the 7130. Input to the 7130 should read –6 dBm, ±3 dBm.
11. Turn the **THRESHOLD** control to minimum. Output of the 7130 must read +16 dBm, ±2 dBm.

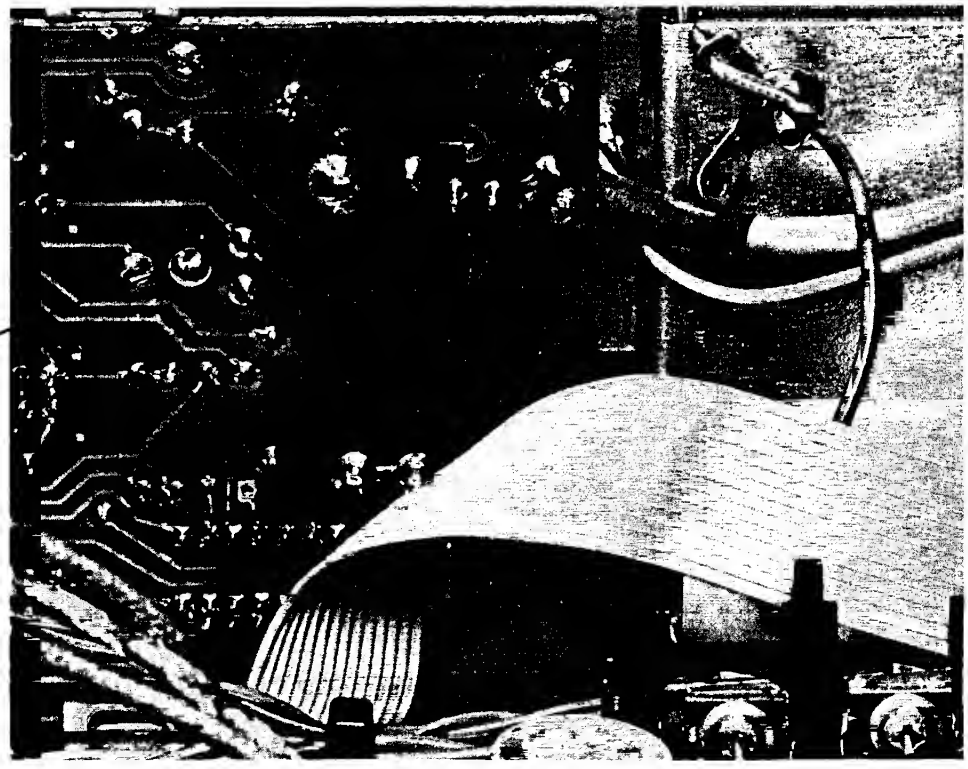

FIGURE 11

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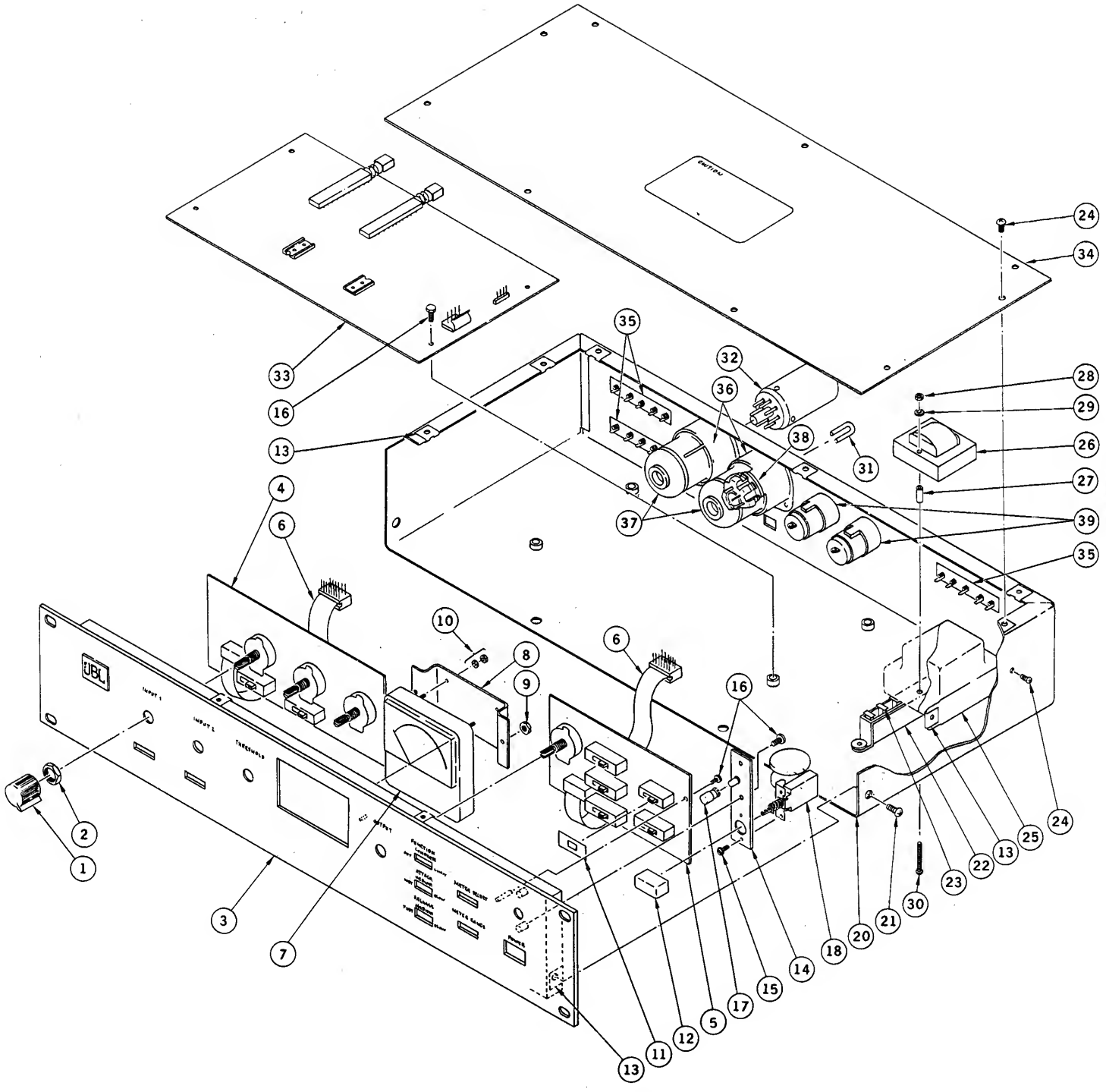

7130 Exploded View and Parts List

FIGURE 13.

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Item	JBL Part No.	Qty	Description
1	55630	4	Knob
2	–	4	Part of board assy.
3	59295	1	Front panel
4	59309	1	PC board assy.
5	59311	1	PC board assy.
6	59315-01	2	Flat ribbon assy.
7	55098	1	Meter
8	59291	1	Meter bracket
9	89508	2	6-32 Keps nut
10	Note [1]	4	Meter mounting set
11	58469	7	Glamour shield
12	54969	1	Knob
13	59827	17	#6 speed washer
14	59933-01	1	PC board assy.
15	47631	2	4-40 x 1/4 binding head screw
16	47896	7	6-32 x 5/16 hex head screw
17	59893	1	Green LED lens
18	54953	1	Power switch
19	13189	2	Capacitor
20	59294	1	Chassis

Item	JBL Part No.	Qty	Description
21	89654	6	6 x 3/8 hex washer screw
22	59303	1	Commoning connector
23	59305	5	Polarizing key
24	59848	11	6 x 3/8 Phillips-head screw
25	59306	1	Power transformer
26	59299	1	Output transformer
27	57806	2	Spacer
28	11496	2	4-40 hex-nut
29	12267	2	#4 lock washer
30	57807	2	4-40 x 1/4 pan head screw
31	58325-01	4	Jumper
32	–	2	5195 or 5901 transformer
33	59313	1	PC board assy.
34	59293	1	Cover
35	82706	3	Terminal strip
36	55107	2	Recess shell
37	59330	2	Plug assy.
38	55106	2	9 pin socket
39	47600	2	XLR-type socket

Note: 1. 3mm set.

WARNING
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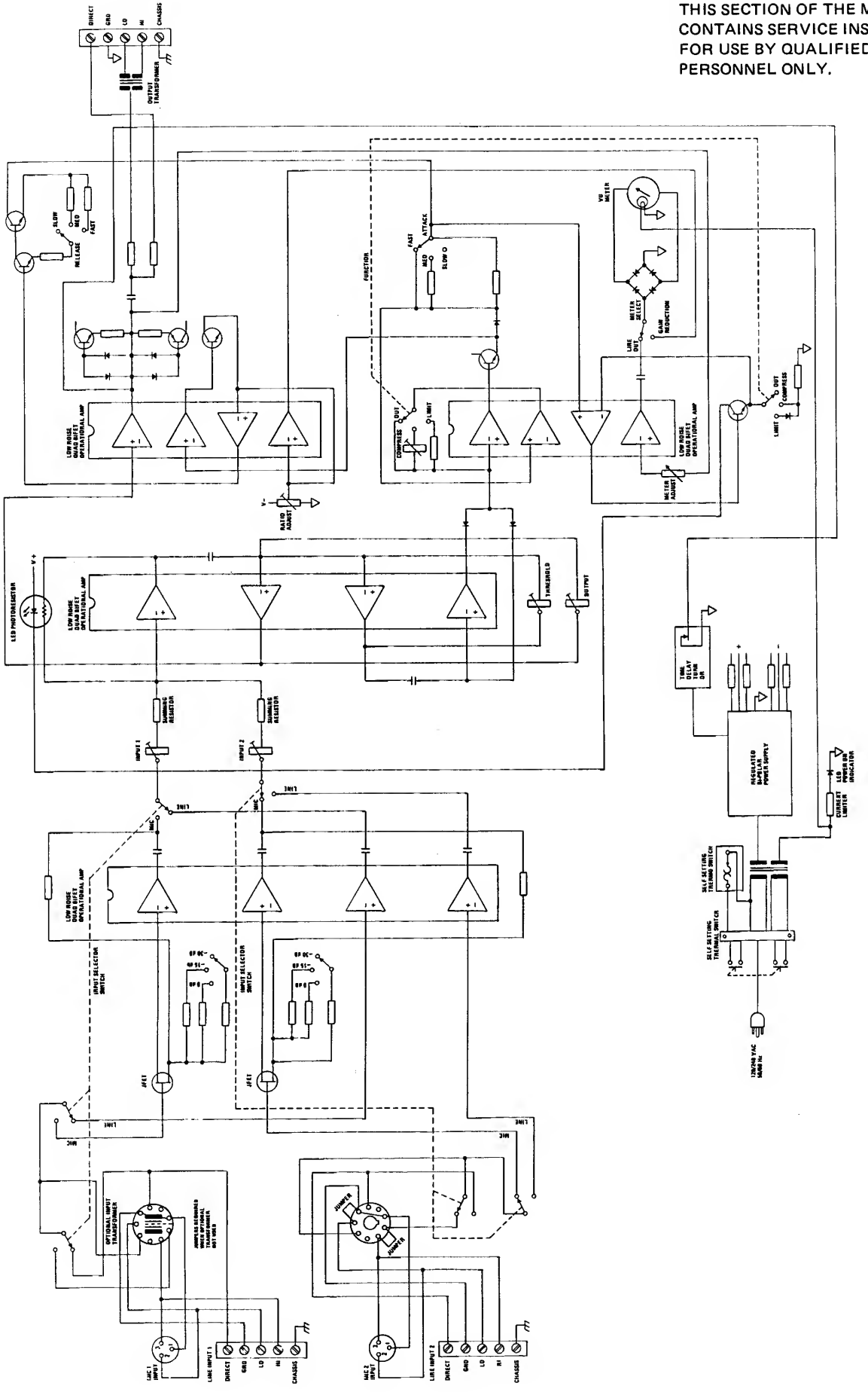

Block Diagram

WARNING
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Test Equipment Required To Meet Proof of Performance:[1]

Clarostat 240C	Decade resistance box
Dana 170	Amplifier
Fluke 8000A	DVM
GenRad W5MT3W	Variable transformer
GenRad 1523/1523P2	Graphic level recorder set
GenRad 1840-A	Output power meter
HP 350B	Attenuator set
HP 339A	Distortion measurement set
HP 400 FL	AC voltmeter
Krohn-Hite 3202	Filter[2]
Philips PM3262	Dual trace scope
Sound Technology 1770B	IM distortion measurement set
Tektronix 7000 series	Storage oscilloscope

Notes: 1. Equivalent test equipment may be substituted.
2. 20 kHz equivalent bandwidth filter.

Circuit Description	JBL Part No.	Description		
CAPACITORS				
All capacitors are in µF unless otherwise noted.				
C2	4844	51 pF	500 V ±5%	Mica
C3	48429	10 pF	500 V ±5%	
C4	53423	50	50 V	
C5	48433	20 pF	500 V ±5%	Mica
C6	–			
C7	40433	20 pF	500 V ±5%	Mica
C8	36188	22	25 V	
C9	58739-2205	22	25 V	
C10	–			
C11	58739-2205	22	25 V	
RESISTORS				
Resistors are fixed, carbon-film, 1/4 W, ±5% unless otherwise indicated.				
R2	36486	16 k		
R3	36522	510 k		
R4	58683-1302	13 k	±2%	metal film
R5	36457	1 k		
R7	58683-1302	13 k	±2%	metal film
R8	36457	1 k		
R10	36474	5.1 k		
R11	58683-1002	10 k	±2%	metal film
R12	58683-6200	620	±2%	metal film
R14	36474	5.1 k		
R15	36477	6.8 k		
R16	58683-1002	10 k	±2%	metal film
R17	58683-1002	10 k	±2%	metal film
R18	58683-1002	10 k	±2%	metal film
R19	36426	51		
R20	36426	51		
R21	36468	3 k		
POTENTIOMETERS				
R6	59179-02	100 k		
R9	59179-02	100 k		
R13	59327-01	50 k		
SEMICONDUCTOR				
AR1	59028	TL074CN	quad op amp	
CR1	52544	1N914B		
CR2	52544	1N914B		
VR1	59321	LED-photoconductor isolator		
SOCKET				
J1	59021-02	14 pin		
SWITCHES				
S1	58407	2PDT		
S2	58407	2PDT		

60992-01 A2 & PL 6/81 Printed in U.S.A.

Circuit Description	JBL Part No.	Description		
CAPACITORS				
All capacitors are in μF unless otherwise noted.				
M.P. are metallized polycarbonate.				
C1	58739-2205	22	25 V	
C2	58690	0.1	100 V ±5%	M.P.
C3	58690	0.1	100 V ±5%	M.P.
C4	48433	20 pF	500 V ±5%	Mica
C6	36188	22	25 V	
C7	58690	0.1	100 V ±5%	M.P.
C8	36188	22	25 V	
RESISTORS				
Resistors are fixed, carbon-film, 1/4 W, ±5%.				
R2	36481	10 k		
R4	36521	470 k		
R6	36481	10 k		
R7	36481	10 k		
R8	36473	4.7 k		
R9	35621	100 k		
R10	36461	1.5 k		
R11	36497	47 k		
R12	36453	680		
R13	36481	10 k		
R14	36485	15 k		
R15	36492	30 k		
R16	36503	82 k		
R17	36497	47 k		
R18	35605	22 k		
R19	36470	3.6 k		
POTENTIOMETERS				
R1	59327-01	50 k		
R3	59320	25 k		
SEMICONDUCTORS				
AR1	59028	TL074CN		
CR1	52544	1N914B		
CR2	39869	1N4003		
CR3	52544	1N914B		
CR4	47611		bridge rectifier	
Q1	48340	MPSA06		
Q2	48338	2N5210		
SOCKET				
J2	59021-02			
SWITCHES				
S1	58407		2PDT	
S2	58407		2PDT	
S3	58407		2PDT	
S4	58402			
S5	58407		2PDT	

60992-02 A3 & PL 6/81 Printed in U.S.A.

Circuit Description	JBL Part No.	Description
CAPACITORS		
All capacitors are in μF.		
C1	13189	0.01
C2	13189	0.01
CONNECTORS		
MIC 1	47600	XLR-type
MIC 2	47600	XLR-type
METER		
M1	55098	
RIBBON CABLE		
W2	59315-01	
W3	59315-01	
POWER CORD		
W1	82477	
SOCKETS		
LINE-MIC 1	55106	
LINE-MIC 2	55106	
SWITCH		
S1	54953	
TERMINAL STRIPS		
TB1	82706	
TB2	82706	
TB3	82706	
TB4	59303	
TRANSFORMERS		
T1	59306	
T2	59299	

Circuit Description	JBL Part No.	Description	
CAPACITORS			
All capacitors are in μF.			
C1	13189	0.01	1.4 KV
C2	13189	0.01	1.4 KV
CONNECTORS			
MIC 1	47600	XLR-type	female
MIC-2	47600	XLR-type	female
METER			
M1	55098		
RIBBON CABLE			
W2	59315-01		
W3	59315-01		
POWER CORD			
W1	82477		
SOCKETS			
LINE-MIC 1	55106		9 pin socket
LINE-MIC 2	55106		9 pin socket
SWITCH			
S1	54953		power
TERMINAL STRIPS			
TB1	82706		
TB2	82706		
TB3	82706		
TB4	59303		commoning connector
TRANSFORMERS			
T1	59306		power
T2	59299		output

Circuit Description	JBL Part No.	Description			
CAPACITORS					
All capacitors are in µF unless otherwise noted.					
M.P. are metallized polycarbonate.					
C1	48433	20 pF	500 V	±5%	Mica
C2	48433	20 pF	500 V	±5%	Mica
C3	58739-2205	22	25 V		
C4	58724-1007	1000	10 V		
C5	48433	20 pF	500 V	±5%	Mica
C6	58739-2205	22	25 V		
C7	48433	20 pF	500 V	±5%	Mica
C8	48433	20 pF	500 V	±5%	Mica
C9	58739-2205	22	25 V		
C10	58724-1007	1000	10 V		
C11	48433	20 pF	500 V	±5%	Mica
C12	58739-2205	22	25 V		
C13	58739-2205	22	25 V		
C14	58730-1006	100	25 V		
C15	58690	0.1	100 V	±5%	M.P.
C16	58739-2205	22	25 V		
C17	58739-2205	22	25 V		
C18	58730-1006	100	25 V		
C19	58690	0.1	100 V	±5%	M.P.
C20	58739-2205	22	25 V		
C21	58725-2206	220	50 V		
C22	58725-2206	220	50 V		
C23	58725-1005	10	50 V		
C24	58738	0.01	100 V	±5%	M.P.
C25	58690	0.1	100 V	±5%	M.P.
C27	58730-3306	330	25 V		
C28	58690	0.1	100 V	±5%	M.P.
C29	48429	10 pF	500 V	±5%	Mica
C30	48433	20 pF	500 V	±5%	Mica
C31	48429	10 pF	500 V	±5%	Mica
C32	53078	1	100 V	±5%	M.P.
CONNECTORS					
J1	59021-02				
J2	59021-02				
J3	58722-07		5 pin		
J4	58722-09		6 pin		
J5	58722-09		6 pin		
J6	59290		4 pin		
HEAT SINK					
	58400		dual		
INSULATOR					
	58488		dual		

Circuit Description	JBL Part No.	Description			
RESISTORS					
Resistors are fixed, carbon-film, 1/4 w, ±5% unless otherwise noted.					
R1	36478	7.5 k			
R2	36481	10 k			
R3	36517	330 k			
R4	58683-5102	51 k	±2%	metal film	
R5	36485	15 k			
R6	36481	10 k			
R7	36479	8.2 k			
R8	36484	13 k			
R9	36481	10 k			
R10	36456	910			
R11	36436	130			
R12	36485	15 k			
R13	36457	1 k			
R14	36481	10 k			
R15	36478	7.5 k			
R16	36481	10 k			
R17	36517	330 k			
R18	58683-5102	51 k	±2%	metal film	
R19	36485	15 k			
R20	36481	10 k			
R21	36479	8.2 k			
R22	36484	13 k			
R23	36481	10 k			
R24	36456	910			
R25	36436	130			
R26	36485	15 k			
R27	36457	1 k			
R28	36481	10 k			
R29	36426	51			
R30	36426	51			
R31	36426	51			
R32	36426	51			
R33	36426	51			
R34	36426	51			
R35	36429	68			
R36	36493	33 k			
R37	36493	33 k			
R38	36429	68			
R40	36514	240 k			
R41	81055	1 meg			
R42	36464	2 k			
R43	35621	100 k			
R44	36443	270			
R46	36449	470			
R47	36481	10 k			
R48	36419	10			
R50	36425	47			
R51	36425	47			

Circuit Description	JBL Part No.	Description			
RESISTORS					
R53	36478	7.5 k			
R54	36482	11 k			
R55	36491	27 k			
R56	36481	10 k			
R57	36419	10			
R58	36481	10 k			
R59	36481	10 k			
R60	35549	100			
R61	35621	100 k			
R63	36521	470 k			
R64	36521	470 k			
R65	36481	10 k			
R66	36488	20 k			
R67	35621	100 k			
R68	35605	22 k			
R69	36481	10 k			
R70	36481	10 k			
R71	36457	1 k			
R72	36522	510 k			
R73	36502	75 k			
R74	36526	750 k			
R75	36481	10 k			
R76	58683-2701	27 k	±2%	metal film	
R77	58683-2701	27 k	±2%	metal film	
POTENTIOMETERS					
R52	59263	25 k	linear		
R62	59263	25 k	linear		
RELAY					
K1	59038		24 V DC		
SEMICONDUCTORS					
AR1	59028	TL074CN			
AR2	59028	TL074CN			
CR1	55648		bridge rectifier		
CR2	52544	1N9148			
CR3	52544	1N9148			
CR4	59878	1N4746A			
CR5	39869	1N4003			
CR6	52544	1N9148			
CR7	52544	1N914B			
CR8	59878	1N4746A			
CR9	52544	1N9148			
CR10	59034	1N4731			
CR11	52544	1N9148			
CR12	52544	1N9148			
CR13	52544	1N914B			
CR14	52544	1N914B			
CR15	52544	1N914B			

Circuit Description	JBL Part No.	Description	
Q1	59030	PF-5101-3	
Q2	59030	PF-5101-3	
Q3	58720	2N6123	
Q4	48337	2N5086	
Q5	48338	2N5210	
Q6	58719	2N6126	
Q7	48337	2N5086	
Q8	55411	MJE182	
Q9	48340	MPSA06	
Q10	55201	MPSA356	
Q11	48338	2N5210	
Q12	48337	2N5086	
Q13	48338	2N5210	
SWITCHES			
S1	59301		6PDT
S2	59301		6PDT

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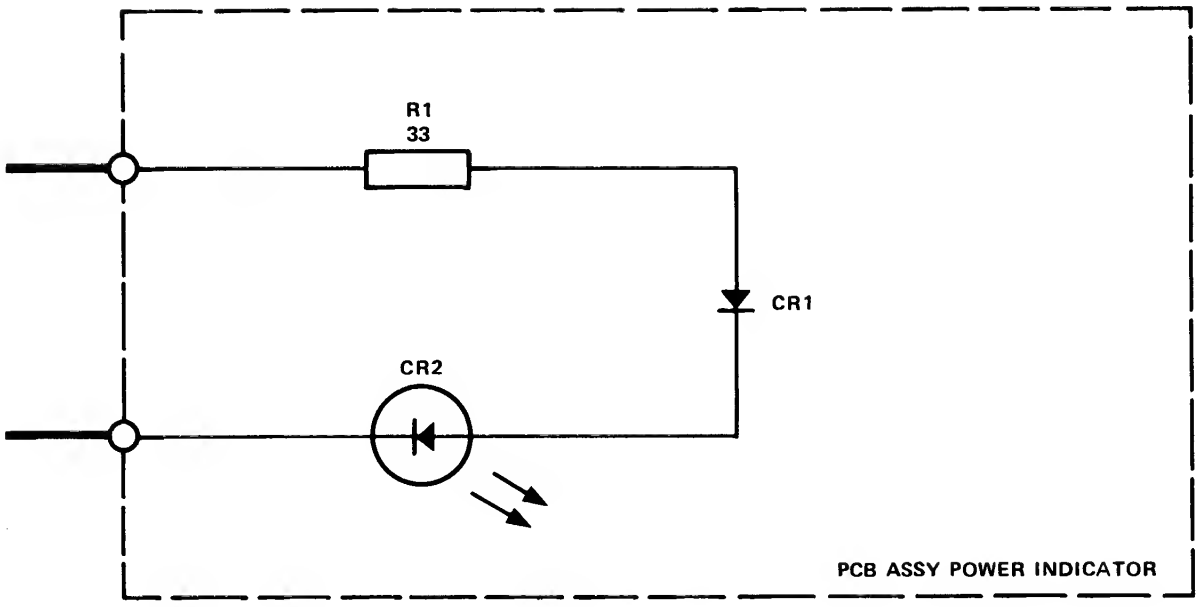

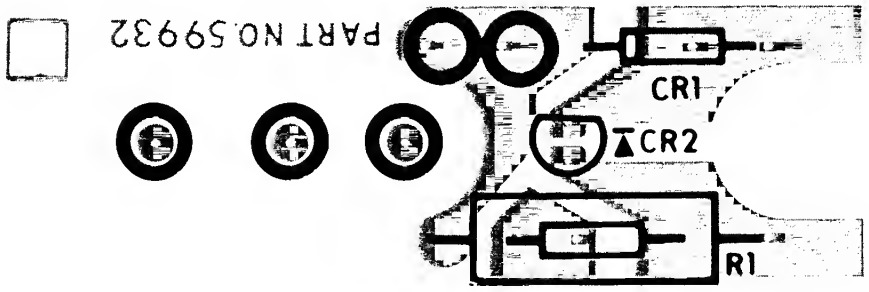

Circuit Description	JBL Part No.	Description	
RESISTOR			
Resistor 1/4 W, ±5%			
R1	36421	33 LED	
SEMICONDUCTORS			
CR1	39869		IN4003
CR2	59894		Green Led

7130 Power Indicator P.C. Board Assembly

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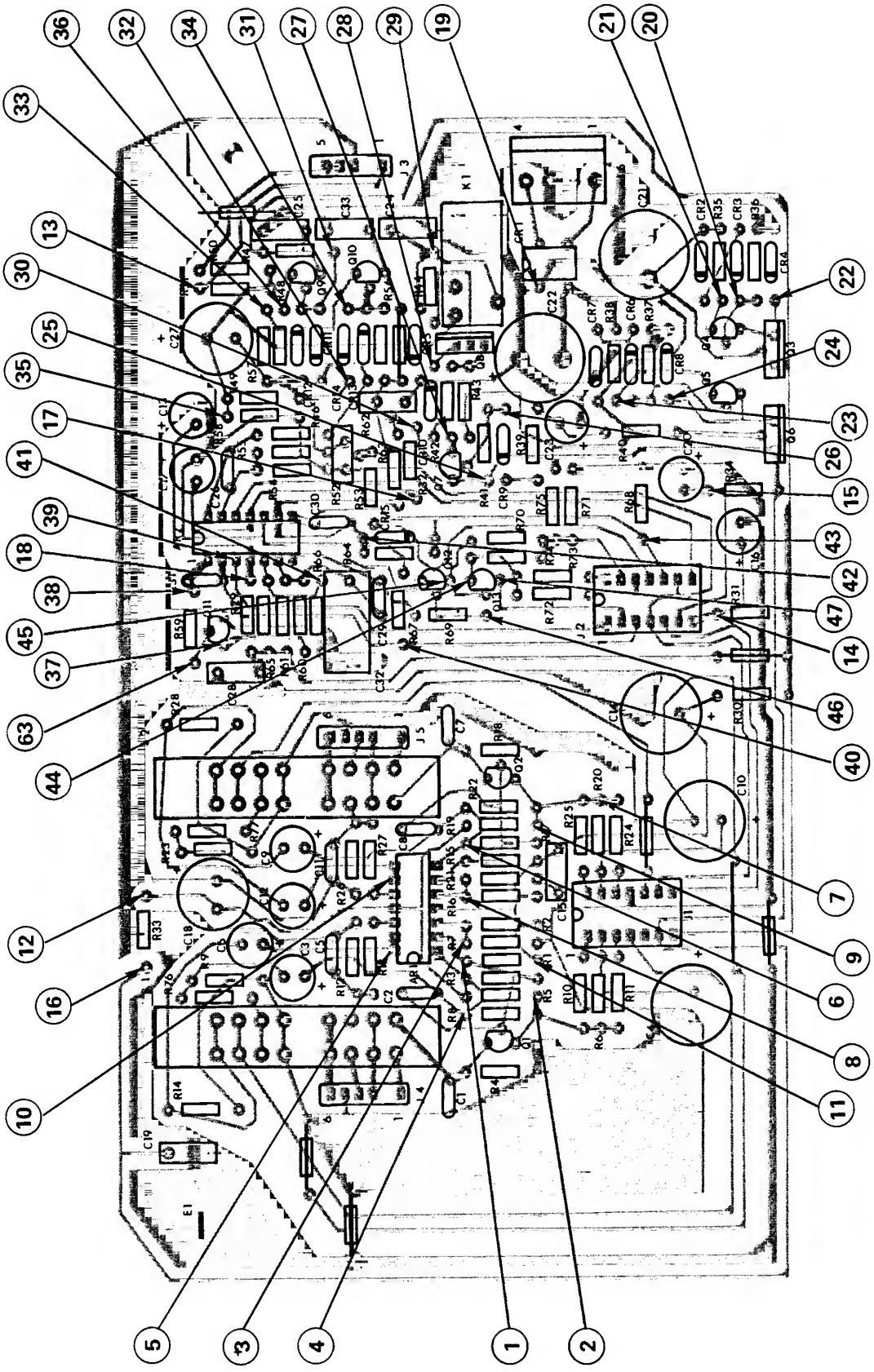

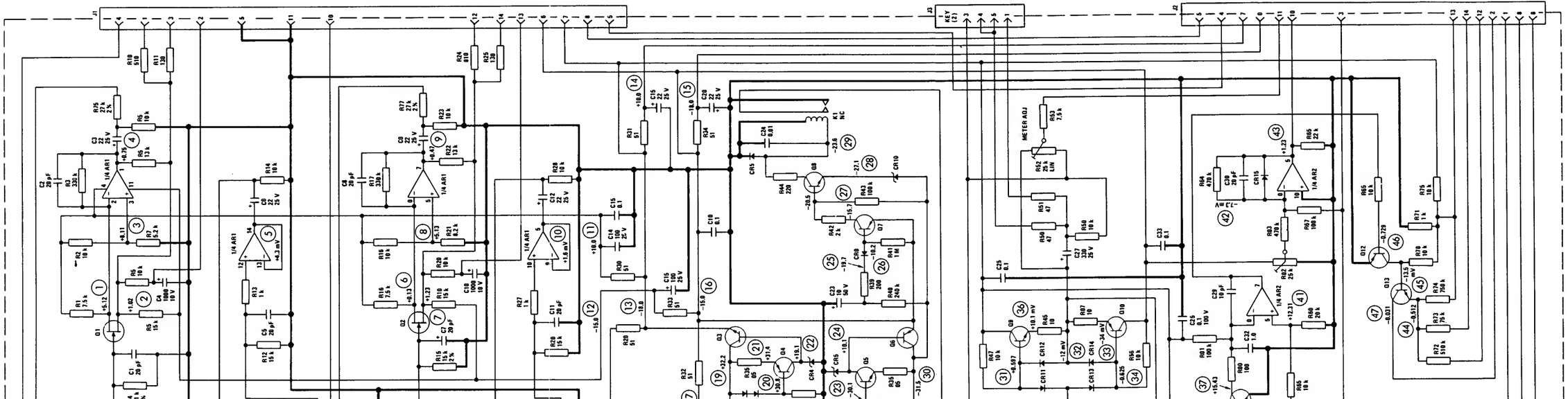

Notes: Unless otherwise specified

1. Voltage measurements made with a Fluke DVM, no signal applied, negative lead of DVM to ground, 120 V AC line

INPUT 1

DIRECT
GND
LO
HI
CHASSIS

TB2

GRN
BLK
WHT
BLK
RED
WHT

LINE–MIC 1

MIC 1

BLK
GRN
RED
WHT

P4 J4

KEY (2)

MIC/LINE 1 S1

INPUT 2

DIRECT
GND
LO
HI
CHASSIS

TB1

GRN
BLK
WHT
BLK
RED
WHT

LINE–MIC 2

MIC 2

WHT
GRN
BLK
RED

P5 J5

KEY (2)

MIC/LINE 2 S2

P6 J6

53 VAC

CR1

J1 P1

J3 P3

KEY (2)

BLK
ORG
GRN
BRN

J2 P2

W2

RED
RED/WHT
RED

A1 – INPUT PCB ASSEMBLY

(2)

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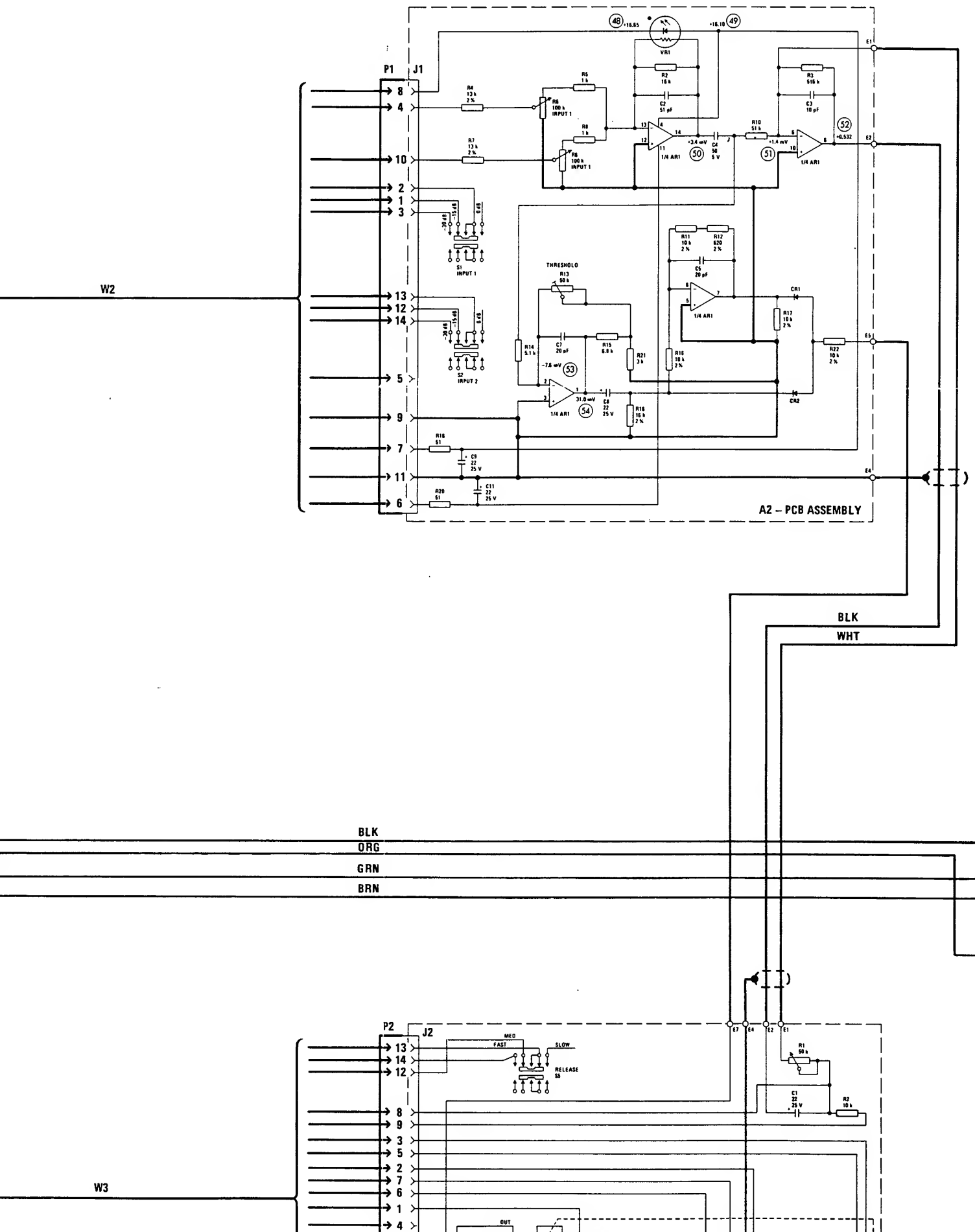
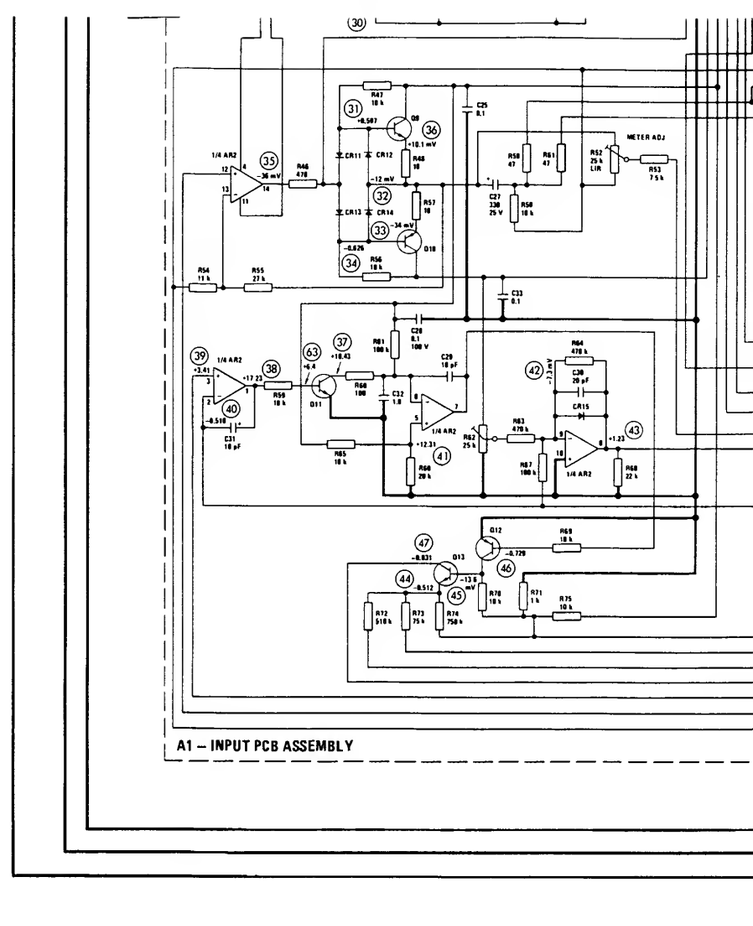
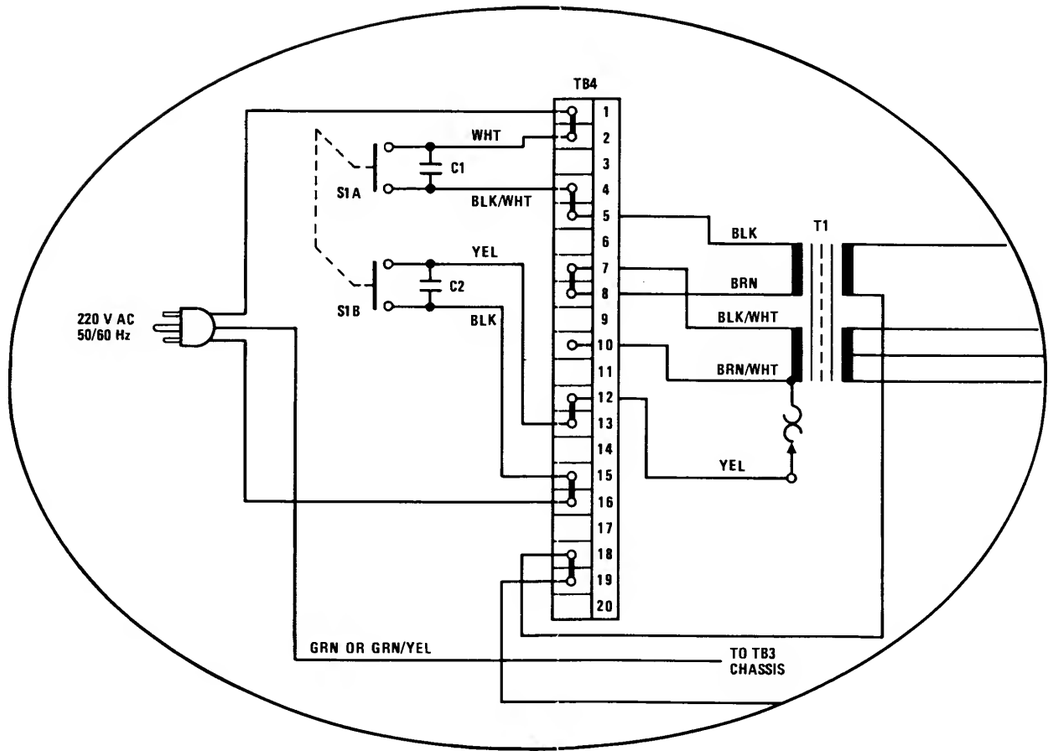


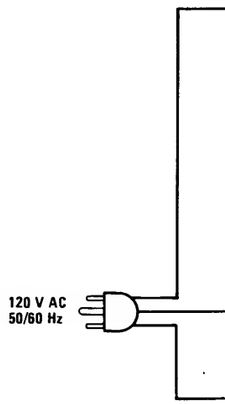
(3)

Notes: Unless otherwise specified

1. Voltage measurements made with a Fluke DVM, no signal applied, negative lead of DVM to ground, 120 V AC line voltage. Voltage tolerance ± 10%.
2. All capacitors are in microfarads unless otherwise noted.
3. All resistors are in ohms.
4. — denotes circuit board.
5. 0 indicates voltage test point found on P.C. assembly.







7130 System Schematic and Parts List

60992-20 SS & PL 6/81 Printed in U.S.A.

(4)

BLK
ORG
GRN
BRN

RED
BRN
YEL
ORG

J3 P3
KEY (2)
3
4
5
1

J2 P2
5
4
7
6
11
10
3
13
14
12
2
1
8
9

W3

P2 J2
13
14
12
8
9
3
5
2
7
6
1
4
11
10

A1 – INPUT PCB ASSEMBLY

A3 – OUTPUT PCB ASSEMBLY

RED
RED/WHT
RED

TB4
WHT
WHT
BLK/WHT
YEL
BLK
BLK

S1A
S1B
C1
C2

120 V AC
50/60 Hz

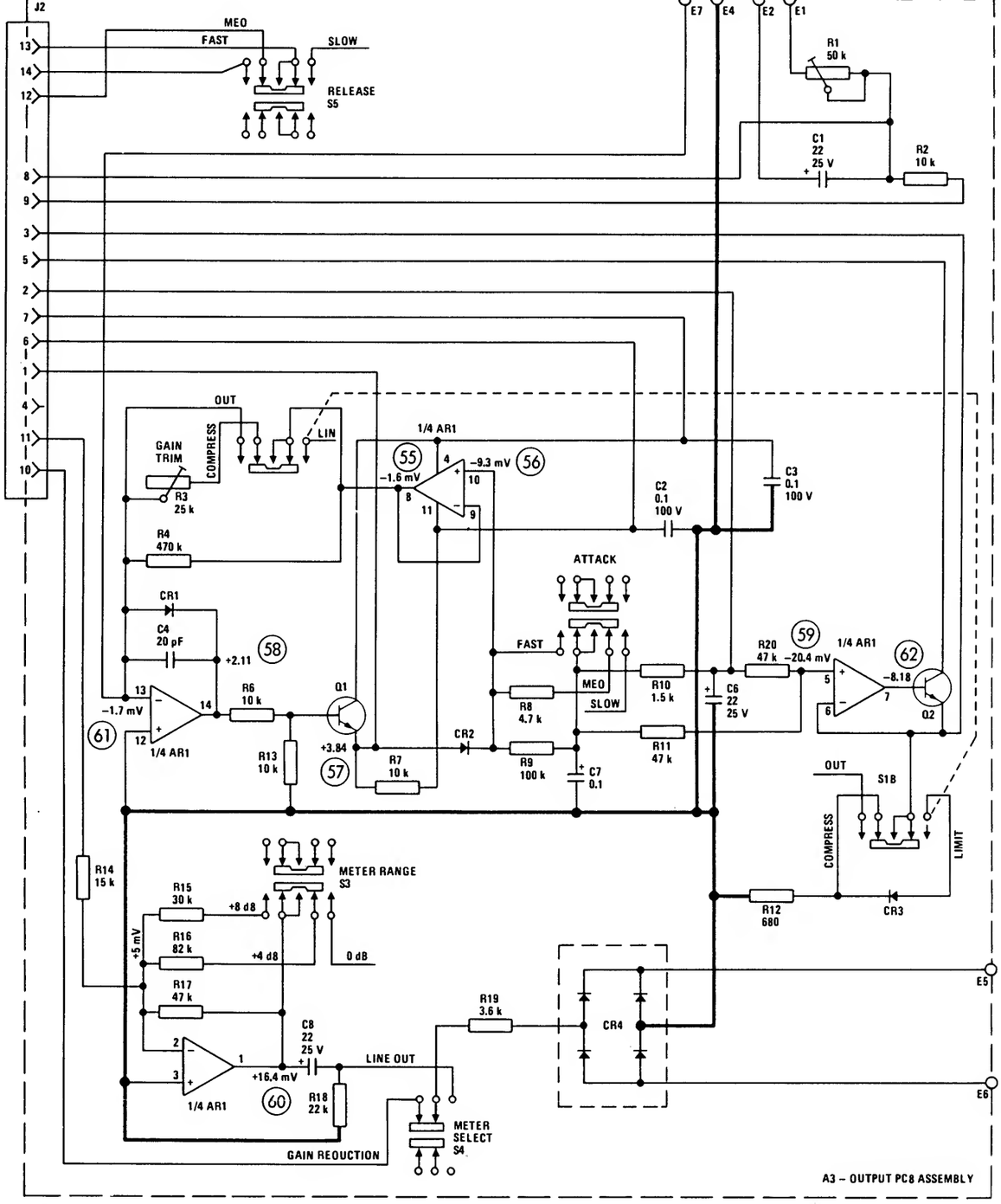
T1
BLK
BRN
BLK/WHT
BRN/WHT
YEL

TO TB3
CHASSIS

GRN DR GRN/YEL

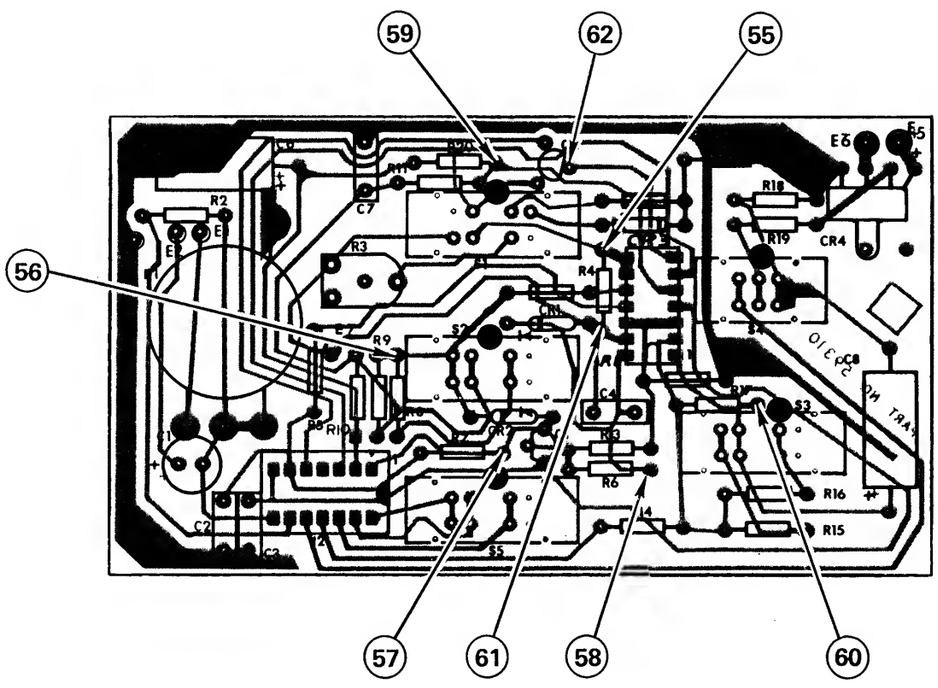
RED
BLU
GRN
GRN
GRN

PCB ASSY
POWER
INDICATOR



Notes: Unless otherwise specified.

1. Voltage measurements made with a Fluke DVM, no signal applied, negative lead of DVM to ground, 120 V AC line voltage. Voltage tolerance ± 10%.
2. All capacitors are in microfarads unless otherwise noted.
3. All resistors are in ohms.
4. – denotes circuit board.
5. 0 indicates voltage test point found on P.C. assembly.



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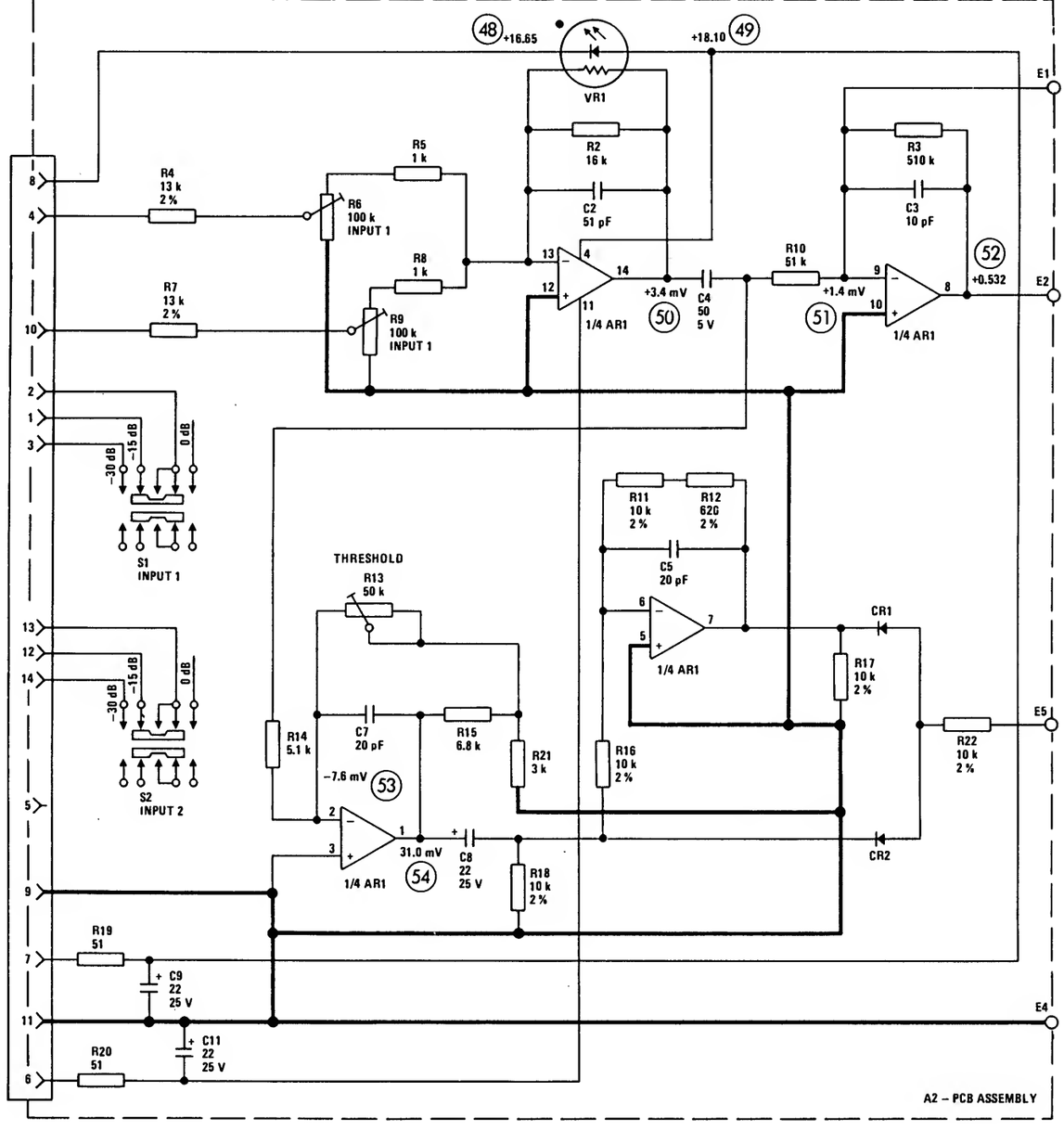
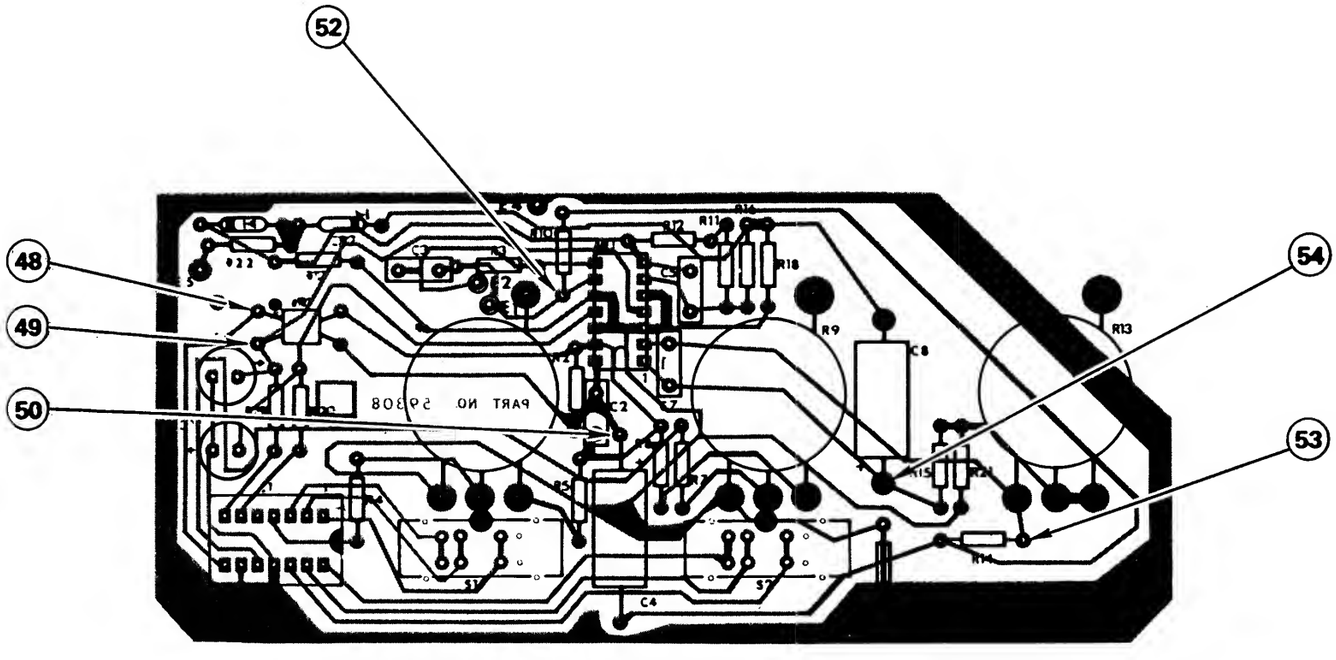


Notes: Unless otherwise specified

1. Voltage measurements made with a Fluke DVM, no signal applied, negative lead of DVM to ground, 120 V AC line voltage. Voltage tolerance ± 10%.
2. All capacitors are in microfarads unless otherwise noted.
3. All resistors are in ohms.
4. — denotes circuit board.
5. 0 indicates voltage test point found on P.C. assembly.



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